CLAIMS

I claim:

1. A method for executing an operation upon a linked data structure having at least one element, the method comprising the steps of:

(a) performing a first set of operation tasks in a first phase, the first set of operation tasks operable to effect a first set of element state transitions;

(b) developing a second set of operation tasks, the second set of operation tasks operable to effect a second set of element state transitions, the second set of element state transitions being distinct from the first set of element state transitions; and

(c) performing the second set of operation tasks in a second phase.

2. The method of claim 1 wherein the first set of operation tasks includes navigating existing data structure links.

3. The method of claim 1 wherein the step of developing a second set of operation tasks further comprises developing pointers to the data structure, the pointers being used in the step of performing the second set of operation tasks in a second phase.

4. The method of claim 1 wherein operation tasks of the second set of operation tasks are performed atomically.

5. The method of claim 1 wherein the step of developing a second set of operation tasks further comprises developing the second set of operation tasks as a list.

6. The method of claim 5 wherein the list further comprises a first in last out list.

7. The method of claim 1 wherein the step of developing a second set of operation tasks further comprises a step of performing a conflicts check for the operation.

8. The method of claim 1 wherein the first set of element state transitions further comprises:

(a) a valid state to a pending delete state transition;

(b) a pre-associated state to a pending insert state transition; and

(c) a pending insert state to a hidden state transition.

9. The method of claim 1 wherein the second set of element state transitions further comprises:

(a) a pending insert state to a valid state transition;

(b) a pending delete state to an invalid state transition;

(c) a hidden state to an invalid state transition;

(d) a pending delete state to a valid state transition;

(e) a hidden state to a pending insert state transition; and

(f) a pending insert state to an invalid state transition.